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TEACHERS' ATTITUDES ABOUT CREATIVITY.
BY- TREFFINGER, DONALD J. AND OTHERS
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TO DETERMINE THE EFFECTS OF AN INSERVICE PROGRAM ON TEACHERS' ATTITUDES ABOUT CREATIVITY, ABOUT 250 TEACHERS AND ADMINISTRATORS, FROM ALL GRADE LEVELS, IN A CITY OF ABOUT 20,000 IN NORTHERN NEW YORK ATTENDED A 4-DAY INSTITUTE IN CREATIVE PROBLEM-SOLVING. THE PROGRAM CONSISTED OF ONE-HOUR FORMAL PRESENTATIONS ON CURRENT THEORY AND RESEARCH IN CREATIVITY AND PROBLEM-SOLVING, AND DISCUSSIONS OF THE PRESENTATIONS. A 14-ITEM ATTITUDE SURVEY, UTILIZING BOTH A 5-POINT LIKERT-TYPE SCALE (STRONGLY AGREE OR DISAGREE) AND A RATING ON A 5-POINT SCALE OF THE TRUTH OF A STATEMENT WAS ADMINISTERED BEFORE AND AFTER THE PROGRAM. IT WAS FOUND THAT AFTER THE PROGRAM (A) MORE TEACHERS AGREED WITH THE STATEMENTS, (1) "THE CREATIVE CHILD IS NOT LIKELY TO BE WELL-LIKED BY HIS CLASSMATES," (2) "IT IS POSSIBLE TO IMPROVE STUDENTS' ABILITY TO THINK CREATIVELY AND TO SOLVE PROBLEMS." (3) "I COULD IDENTIFY THE CHILDREN IN MY CLASSROOM WHO ARE THE MOST CREATIVE." AND (4) "THERE IS A VERY THIN LINE BETWEEN THE VERY CREATIVE ACT AND THE PATHOLOGICAL." AND (B) MORE TEACHERS DISAGREED WITH THE STATEMENTS, (1) "OUR EFFORTS TO IMPROVE CREATIVITY ARE IN VAIN BECAUSE IT IS PROBABLY A NATIONAL STRENGTH." AND (2) "MOST PAPER AND PENCIL TESTS DO NOT REALLY MEASURE STUDENTS' CREATIVE ABILITIES." IT IS CONCLUDED THAT SUCH INSERVICE PROGRAMS ARE VALUABLE IN DEVELOPING INCREASED UNDERSTANDING OF CREATIVITY. (AW)

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TEACHERS' ATTITUDES ABOUT CREATIVITY

Donald J. Treffinger and Richard E. Ripple
Cornell University

and

John S. Dacey
Boston College

There is an increasing recognition among educators of the role of the school in identifying and nurturing the creative problem-solving abilities of pupils. The need for more efficient teaching and learning strategies, in the face of the explosion of knowledge, and more sophisticated understanding of creativity in education, psychology, and sociology, have contributed to this recognition.

It is clear that the effectiveness of the school in helping pupils realize their creative potential hinges on the attitude of teachers toward creativity and its expression in their pupils. Several recent studies suggest that teachers do not understand what is meant by creativity in education and are unable to identify creative talent among their pupils (Williams, 1964; Eberle, 1966). Williams (1965) reports that when teachers are exposed to in-service education on what is known about creativity and the creative person, they are better able to identify and work with creative pupils. It would seem that in-service education programs for teachers hold the promise of increasing the effectiveness with which the school is able to fulfill its role in identifying and nurturing creative problem-solving abilities of pupils. This paper describes such an in-service program and reports its effects on teachers' attitudes about creativity.

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Description of the Program

The in-service education program to be described here covered a four-day period, and involved approximately 250 teachers and administrators at all grade levels from public and parochial schools in a city of about 20,000 people in Northern New York. Classes throughout the city were dismissed at noon on each of the four days, so that school personnel would be free to participate in the program. The program was conducted by the authors of this paper.

The objectives of the program were to help teachers become more able to:

a. utilize innovative instructional materials and approaches as an integral part of their classroom procedures;

b. discuss and criticize identifiable approaches to the nature and nurture of creativity and its measurement;

c. recognize problems that must be dealt with if they are to identify and work effectively with creative pupils;

d. apply the recommendations emerging from theory and research regarding teacher methods and other classroom procedures facilitating creative pupil behavior;

e. critically evaluate the effectiveness of instructional materials designed to facilitate creative thinking and problem solving abilities, and to make appropriate modifications for particular purposes.

The daily program began with a luncheon meeting, during which the leaders were available for informal discussion. Following the luncheon, an afternoon session was held. These sessions consisted of two formal presentations, each about one hour in length. The presentations included current theoretical approaches to creativity and problem-solving (e.g., Guilford, 1959, 1966; Torrance, 1962, 1963; Mednick, 1962; Maltzman, 1960), recent research on creativity in children (Getzels and Jackson, 1962; Wallach and Kogan, 1965) and in

adults (MacKinnon, 1962). Other sessions dealt with the personality correlates of creative ability (Getzels and Jackson, 1962; Wallach and Kogan, 1965; MacKinnon, 1962; Dacey and Ripple, 1967). Innovative instructional materials were also demonstrated and discussed (Crutchfield and Covington, 1965; Covington and Crutchfield, 1965; Crutchfield, Covington and Davies, 1966; Myers and Torrance, 1966; Cunnington and Torrance, 1966; Ripple and Dacey, 1967).

Each of the four daily programs concluded with informal two hour evening discussion sections. Elementary, junior high, and secondary school personnel met separately. These discussions gave the participants opportunities to react to the afternoon presentations, to challenge and explore ideas in greater detail with the seminar leaders, to exchange ideas among themselves, and to engage in creativity testing, teacher ratings of creative students, and other activities. Approximately 200 persons participated in these meetings.

The Attitude Survey

Prior to the first session, all participants were asked to complete a 14-item attitude survey. The same survey was re-administered at the conclusion of the program. Respondents were impersonally identified by recording their telephone numbers on each page of both surveys. Reliably matched pre- and post- measures were obtained for approximately 180 respondents. Of the 14 items on the attitude survey, 11 items were presented as statements to which the respondents indicated agreement or disagreement on a 5-point Likert-type scale (strongly agree - strongly disagree). Three items asked the respondent to evaluate the truth of a statement, rather than agreement or disagreement, using a similar 5-point scale.

For purposes of analysis of the responses, strongly disagree and disagree responses were combined as a measure of disagreement, and a similar combination was made to assess agreement. (The remaining response on the scale indicated no opinion.)

The statements were:

1. The creative child is a liability to my classroom because of his disruptive manner.

2. Creative problem solving ability is probably a natural strength that some students have and others don't, so that most of our efforts to improve it in our students are in vain.

3. The creative child is not likely to be well-liked by his classmates.

4. It is possible to improve pupils' ability to think creatively and to solve problems through direct instruction in creativity.

5. Only a few people in every thousand can truly be considered creative.

6. Because of the explosion of knowledge in the world, children cannot be taught how to cope with every situation they will ever meet; this indicates the need for teaching creative thinking if we can.

7. I think that I could identify the children in my class who are the most creative.

8. Most paper and pencil tests of creativity do not really measure creative abilities of pupils.

9. The most typical creative person is the "beatnik" or "non-conformist" type who may well be in need of a bath.

10. Even if it is possible to teach children to become more creative, there are serious questions about the necessity or wisdom of doing so.

11. Creative people are born, not made.

12. "Creativity" is something which is found among only a few people; most of us lack it almost entirely.

13. There is a very thin line which divides the very creative act from the pathological.

14. If we were to try to teach pupils to become more creative, we run the risk of creating a nation of non-conforming individualists who will be unable to maintain normal social relations.

Results

Table 1 presents the number and per cent of respondents agreeing, disagreeing, and expressing no opinion on the pre- and post-attitude measures.

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Insert Table 1 about here

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On both pre- and post- measures, a high percentage of the respondents were in disagreement with these statements:

1. that because of his disruptive manner, the creative child is a liability to the classroom;

2. that creativity is a natural strength, making our efforts to improve it fruitless;

5. that only a few people in every thousand can truly be considered creative;

9. that the most typical creative person is stereotyped as a "beatnik" or "non-conformist";

10. that there are serious questions about the wisdom or necessity of teaching children to become more creative;

11. that creative people are born, not made;

12. that most of us almost entirely lack creativity;

14. and that, by attempting to foster creativity, we risk developing a nation of non-conforming individualists unable to maintain normal social relations.

Disagreement with these items was consistent with the objectives and presentations of the program.

On both pre- and post- measures, a high percentage of the respondents were in agreement with these statements:

4. that it is possible to foster creativity through direct instruction;

6. that the explosion of knowledge points up the need for teaching pupils to think creatively if we can;

7. that the respondent would be able to identify the pupils with creative talent in his classroom;

8. and that most paper and pencil tests of creativity are not <u>really</u> measuring pupils' creative ability.

For the most part, these results were not surprising. As a generalization, it is suggested that the great majority of the participants were sensitive to the importance of teaching pupils to become better creative problem solvers and were able to approach the topics without rigid stereotypes about the nature of the creative person or process.

The strongly-held position that paper and pencil tests do not really tap creative abilities was surprising. Presentations and discussions utilized several such measures, and attempts were made to relate these to current theoretical notions of creative thinking abilities such as the tests based on the Structure of Intellect Model (Guilford, 1959).

The results presented above do not represent an adequately sensitive treatment of the program's impact on the participants. There is no way of identifying from the data in Table I whether those holding a given opinion on the pre-test held the same opinion on the post-test. As a result, the amount of <u>change</u> that was observed for <u>each</u> item has also been tabulated. These are presented in Table II.

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Insert Table II about here

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It will be noted that on every item, there was some change of attitude from pre- to post- measures. In six of the 14 items, the change in a given direction was significantly greater than the change

in the opposite direction (e.g., greater change from disagreement or neutrality to agreement than from agreement or neutrality to disagreement). In all six cases, the greater change was in a direction consistent with the content and objectives of the program.

Specifically, significant changes were noted in these items:

a.) greater disagreement with Statement 2, that our efforts to improve creativity are in vain because it is probably a natural strength;

b.) greater agreement with Statement 3, that the creative child is not likely to be well-liked by his classmates;

c.) greater agreement with Statement 4, that it is possible to improve pupils' ability to think creatively and to solve problems through direct instruction;

d.) greater agreement with Statement 7, that "I could identify the children in my classroom who are the most creative;"

e.) greater disagreement with Statement 8, that most paper and pencil tests do not really measure pupils' creative abilities;

and, f.) greater agreement with Statement 13, that there is a very thin line between the very creative act and the pathological.

The data presented in Table II offer support for the value of in-service education programs for teachers in the area of creative problem solving. In defense of this statement each of the six significant changes reported in Table II will be discussed.

Despite the fact that over 50 per cent of the respondents disagreed with Statement 2 on the pre-test, there was significant change in the direction of disagreement on the post-test. Evidence from many sources supports the notion that it is possible for us to improve our pupils' creative thinking and problem-solving abilities. This idea has been

supported by considerable research in recent years (e.g., Covington and Crutchfield, 1965; Hallman, 1964). It was considered desirable that respondents should disagree with the statement.

The change toward agreement with Statement 3 ("the creative child is not likely to be well-liked by his classmates") probably reflects consideration of the "freedom" or "openness to experience and expression" which has been discussed frequently in recent characterizations of creative children (e.g., Getzels and Jackson, 1962; MacKinnon, 1962; Anderson, 1961). Several discussions might have led the participants to the inference that the expression of creative behavior by a child might often b judged "crazy" or "wild" by his peers.

The change toward agreement with Statement 4 probably indicates that there was considerable merit in demonstrating materials currently avai able, and in discussing the kinds of activities which teachers might originally construct and carry out in their classrooms. One of the concerns expressed by many teachers during the early part of the workshop was that there was a need to see examples of how research and theory could actually be implemented in the classroom. It would seem that attempts to meet those concerns met with some degree of success.

Regarding the change in the direction of disagreeing with Statement 8 (that paper and pencil tests of creativity do not really measure the creative ability of pupils), an interesting phenomenon can be observed. As has been noted above, almost three out of four respondents agreed with the statement on the pre-test, and half on the post-test. This was surprising in view of the position taken in formal presentations and informal group discussions. However, despite the fact that some participants remained steadfast in their original positions (in all, 42 per cent of the subjects' responses were identical on both measures),

it is apparent that the presentations and discussion were effective for a substantial number of the participants.

The change noted toward agreement with Statement 7, regarding identification of creative pupils, also reflects the impact of the program on the participants. The teachers were presented with a definition of creative behavior and a procedure for making a teacher rating. In an informal evening session, to which teachers had been asked to bring class lists, the teachers actually attempted to make such a rating. There was a good deal of discussion about how the ratings might be utilized at a later date, and of the value and limitations of such procedures.

Finally, the change in the direction of agreeing with Statement 13 also seems to reflect the influence of presentations and discussion of recent theory and research. Again, it would appear that characterizations of creative expression in terms of preferences for "cognitive complexity," "stimulus freedom," or "openness to experience," may have suggested to the participants that in fact a "thin line" divides the creative act from the pathological. Of course, the demands of task appropriateness were also discussed, and it was suggested that it <u>is</u> possible to distinguish creative talent from pathological behavior.

Conclusions

The results of the present study support the notion that in-service education programs in creative problem solving make a valuable contribution to the professional development of participants. Not only is it possible to use such in-service programs to facilitate teachers' ability to identify creative pupils but, perhaps equally as important, it seems possible to help teachers and administrators develop increased understanding and more favorable attitudes about creative problem-solving abilities.

Abstract

Two hundred fifty teachers and administrators participated in a four-day in-service program on creative problem-solving. Attitude surveys were administered before and after the program. Comparisons indicate that there were significant changes in attitudes consistent with the objectives of the program. For example, participants recognized the need for consideration of creative problem-solving in the classroom, rejected unfavorable stereotypes of the creative person, and changes were observed toward greater confidence in teacher's ability to rate pupils on creativity and in utilizing available materials to foster creative problem-solving abilities. The data presented were interpreted as supporting the value of such in-service programs and as indicating contributions to teachers' understanding of creativity and creative pupils through participation in such programs.

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TABLE I:

Numbers (and Percentages) of Respondents Agreeing, Disagreeing, and Expressing No Opinion, on Pre- and Post-Attitude Measures

		Pre-Test Measure			Post-Test Measure		
Item	N	Agree	No Opinion	Disagree	Agree	No Opinion	Disagree
		n %	n %	n %	n %	n %	n %
Treffinger 1	169	18 (10.7)	9 (5.3)	142 (84.0)	17 (10.1)	9 (5.3)	143 (84.6)
2	178	23 (12.9)	12 (6.7)	143 (80.4)	14 (7.9)	5 (2.8)	159 (89.3)
3	178	26 (14.6)	13 (7.3)	139 (78.1)	84 (47.2)	15 (8.4)	79 (44.4)
4	177	129 (72.9)	16 (9.0)	32 (18.1)	135 (76.3)	16 (9.0)	26 (14.7)
5	175	27 (15.4)	20 (11.4)	128 (73.2)	35 (20.0)	11 (6.3)	129 (73.7)
6	176	168 (95.5)	5 (2.8)	3 (1.7)	164 (93.2)	7 (4.0)	5 (2.8)
7	175	133 (76.0)	18 (10.3)	24 (13.7)	150 (85.7)	16 (9.1)	9 (5.2)
8	176	139 (79.0)	23 (13.1)	14 (7.9)	93 (52.8)	26 (14.8)	57 (32.4)
9	179	4 (2.2)	16 (8.9)	159 (88.9)	10 (5.6)	13 (7.3)	156 (87.1)
10	176	35 (19.9)	18 (10.2)	123 (69.9)	35 (19.9)	24 (13.6)	117 (66.5)
11	172	64 (37.2)	10 (5.8)	98 (57.0)	63 (36.6)	8 (4.7)	101 (58.7)
12	173	16 (9.2)	8 (4.6)	149 (86.2)	21 (12.1)	3 (1.7)	149 (86.2)
13	174	20 (11.5)	62 (35.6)	92 (52.9)	65 (37.4)	26 (14.9)	83 (47.7)
14	175	10 (5.7)	11 (6.3)	154 (88.0)	16 (9.1)	9 (5.1)	150 (85.8)

TABLE II:

Summary of Changes in Pairs of Observations

from Pre- and Post- Attitude Measures

Item	% Base	(A) From Disagreement or Neutrality to Agreement (%)[2]	(B) No Change (%)[2]	(C) From Agreement or Neutrality to Disagreement (%)[2]	p[1]
1	169	8 (4.7)	108 (63.9)	14 (8.3)	n.s.
2	178	8 (4.5)	100 (56.2)	23 (12.9)	d
3	178	65 (36.5)	78 (43.8)	10 (5.6)	b
4	177	28 (15.8)	91 (51.4)	15 (8.5)	a
5	175	22 (12.6)	92 (52.6)	23 (13.1)	n.s.
6	176	5 (2.8)	121 (68.8)	4 (2.3)	n.s.
7	175	30 (17.1)	108 (61.7)	6 (3.4)	b
8	176	11 (6.3)	74 (42.0)	49 (27.8)	d
9	179	9 (5.0)	98 (54.7)	14 (7.8)	n.s.
10	176	18 (10.2)	87 (49.4)	22 (12.5)	n.s.
11	172	21 (12.2)	97 (56.4)	24 (14.0)	n.s.
12	173	15 (8.7)	93 (53.8)	12 (6.9)	n.s.
13	174	51 (29.3)	63 (36.2)	29 (16.7)	b
14	175	13 (7.4)	94 (53.7)	13 (7.4)	n.s.

1/ Probability statements:
- a) A>C, A-C≠0, p<.05.
- b) A>C, A-C≠0, p<.01.
- c) C>A, C-A≠0, p<.05.
- d) C>A, C-A≠0, p<.01.

2/ Percentages need not sum to 100 because of within category variations (agree-to-strongly agree; strongly disagree- to= disagree, etc.)

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